

In the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1-23 (canceled)

24. (Currently Amended) A method of determining the material intercepted by a spot of light during the measurement of a region including at least a first material and a second material, said method comprising:

scanning a measurement spot of light from a differential interferometer across said region;

measuring the intensity of at least said measurement spot of light scanning across said region; and

determining the material that at least said measurement spot of light is incident upon by the measured intensity.

25. (Original) The method of Claim 24, further comprising:

modulating the phase of radiation produced by a laser;

splitting said radiation produced by said laser into two beams;

reflecting said two beams of said sample;

recombining said two beams into a single beam; and

detecting said single beam.

26. (Original) The method of Claim 25, wherein detecting said single beam produces a detector signal; said method further comprising:

analyzing the intensity of said detector signal using

$$\text{Intensity} = A + B \times \cos(CV + D)$$

where A is the average intensity of the detector signal, B is one half of the peak to peak intensity, C is the modulator sensitivity, V is the applied modulator voltage and D is the phase shift associated with the two beams.

27. (Original) The method of Claim 26, further comprising:

determining a first intensity of one of said two beams and a second intensity of the other of said two beams using A and B and using the following formulas:

$$\text{First Intensity} = \frac{A + \sqrt{A^2 - B^2}}{2}$$

$$\text{Second Intensity} = \frac{A - \sqrt{A^2 - B^2}}{2}; \text{ and}$$

determining the material that said two beams are incident upon using at least one of said first intensity and said second intensity.

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